In re Appln of WINIK et al
Application No. 10/591,651
Reply to Office Action of March 10, 2010
Reply dated June 10, 2010

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 (**Currently Amended**). A polarizer device of Glan-Thompson type comprising first and second prisms made of a birefringent material having certain dispersion ~~profilesn,, (k) andn, (/%)~~profiles $n_0(\lambda)$ and $n_e(\lambda)$ for, respectively, ordinary and extraordinary polarization axis and being coupled to each other by a binding material layer, wherein said binding material has a dispersion profile, ~~ng()~~$n_g(\lambda)$, matching said dispersion ~~profilesn, (k)~~ profiles $n_0(\lambda)$ and ~~rie(X)~~ $n_e(\lambda)$ so as to provide an effect of total internal reflection within a spectral range including short wavelength of ~~about190nm~~ about 190 nm.

2 (**Currently Amended**). The device of claim 1, wherein said prisms are made of ~~A-BOBO~~ α-BBO crystals.

3 (**Currently Amended**). The device of claim 1, wherein said first and second prisms have a cut ~~angle0'of about31~~ angle θ' of about 31°.

4 (**Previously Presented**). The device of claim 1, wherein said binding material is RTV silicone.

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5 (**Previously Presented**). The device of claim 1, wherein said binding material is a two-part material.

6 (**Previously Presented**). The device of claim 1, wherein said binding material has controlled volatility.

7 (**Previously Presented**). The device of claim 1, wherein said binding material has low viscosity.

8 (**Previously Presented**). The device of claim 1, wherein said binding material is CV15-2500 optical glue, commercially available from NuSil Technology, USA.

9 (**Previously Presented**). The device of claim 1, wherein said binding material layer has a thickness of a few microns.

10 (**Previously Presented**). The device of claim 1, wherein said binding material layer includes a mixture of an optical glue material with small beads of solid transparent material.

11 (**Currently Amended**). The device of claim 10, wherein said beads are uniformly distributed within the glue material with a surface area concentration of the beads substantially not exceeding ~~$10^{-1}cm^{-1}$~~ $\underline{10^{-6}cm^{-2}}$.

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12 (**Previously Presented**). The device of claim 1, wherein each of the prisms' facets defining side facets of the device for inputting and outputting light has a circular geometry.

13 (**Currently Amended**). The device of claim 1, wherein each of the ~~prisms'facets~~ prisms' facets defining side facets of the device for inputting and outputting light is a polygon of more than four angles.

14 (**Currently Amended**). The device of claim 1, wherein each of the ~~prisms'facets~~ prisms' facets defining side facets of the device for inputting and outputting light is an eight-angle polygon.

15 (**Currently Amended**). A polarizer device of Glan-Thompson type comprising first and second prisms made of a birefringent material having certain dispersion profiles ~~$n_{,,}$ (k)~~ $n_0(\lambda)$ and ~~ne (X)~~ $n_e(\lambda)$ for, respectively$_{,}$ ordinary and extraordinary polarization axis and being coupled to each other by a binding material layer including a mixture of a binding material and small beads of a solid transparent material, wherein said binding material has a dispersion profile, ~~ng (X)~~ $n_g(\lambda)$, matching said dispersion profiles ~~no (X)~~ $n_0(\lambda)$ and ~~ne (X)~~

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$n_e(\lambda)$ so as to provide an effect of total internal reflection

within a spectral range including short wavelength of about

190nm.

16 (**Currently Amended**). A polarizer device of Glan-

Thompson type comprising first and second prisms made of a

birefringent material having certain dispersion profiles ~~no(X)~~

$n_0(\lambda)$ and ~~ne(X)~~ $n_e(\lambda)$ for, respectively, ordinary and

extraordinary polarization axis and being coupled to each other

by a binding material layer including a mixture of a binding

material and small beads of a solid transparent material,

wherein said binding material has a dispersion profile, ~~ng(X),~~

$n_g(\lambda)$, matching said dispersion ~~profilesno (7) andne (k)~~ profiles

$n_0(\lambda)$ and $n_e(\lambda)$ so as to provide an effect of total internal

reflection within a spectral range including short wavelength of

~~about190nm~~ about 190nm and wherein the beads being substantially

uniformly distributed within the binding material layer with a

surface area concentration, ~~C,,~~ C_s, substantially not ~~exceeding1~~

~~0~6cm~2~ exceeding 10^{-6}cm^{-2}.

17 (**Currently Amended**). A polarizer device comprising

first and second prisms coupled to each other by their tilted

surfaces; and a binding material layer between said tilted

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surfaces of the prisms, said layer including a mixture of a

binding transparent material and small beads of a solid

transparent material, the binding material layer thereby having

a substantially uniform thickness of ~~about5-10 microns.~~about 5-

10 microns.~~A polarizer device having opposite side facets~~

~~serving for, respectively, inputting and outputting light,~~

~~wherein each of said side facets is either a circle or a polygon~~

~~of more than four angles.~~

18 (**Currently Amended**). A method of manufacturing a

polarizer device of Glan-Thompson type comprising providing

first and second prisms made of a selected birefringent material

having certain dispersion ~~profilesr,, (X)~~ profiles $n_0(\lambda)$ and

~~ne(X)~~ $n_e(\lambda)$ for, respectively ordinary and extraordinary

polarization axis, selecting a binding material having a

dispersion ~~profile,ng(,)~~profile, $n_g(\lambda)$, matching said dispersion

~~profilesno (7) andne (k)~~ profiles $n_0(\lambda)$ and $n_e(\lambda)$ so as to provide

an effect of total internal reflection within a spectral range

including short wavelength of about 190nm and attaching the

tilted surfaces of the prisms to each other by a layer of said

binding material.

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19 (**Original**). A method of manufacturing a polarizer device of Glan-Thompson type comprising providing first and second prisms coupled to each other at their tilted surfaces by a binding material layer, which includes a mixture of a binding transparent material and small beads of a solid transparent material, the binding material layer thereby having a substantially uniform thickness of about 5-10 microns.

20 (**Original**). A method of manufacturing a polarizer device of Glan-Thompson type comprising providing first and second prisms coupled to each other at their tilted surfaces by a binding material layer, which includes a mixture of a binding transparent material and small beads of a solid transparent material, the binding material layer thereby having a substantially uniform thickness of about 5-10 microns.

21 (**Currently Amended**). The method for manufacturing a polarizer device of ~~Glan-Thompson type of any of the preceding method Claims~~ claim 18 comprising configuring opposite side facets serving for, respectively, inputting and outputting light, to be either a circle or a polygon of more than four angles, thereby minimizing a footprint of the polarizer device.

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22 (**New**). A polarizer device having opposite side facets serving for, respectively, inputting and outputting light, wherein each of said side facets is either a circle or a polygon of more than four angles.